

REMARKS/ARGUMENTS

Claims 38-52 and 54-64 are pending in the present application. Claims 38-51 are withdrawn and claims 52 and 54-64 stand rejected. By the present amendment, Claims 54, 56-58 and 60-62 have been canceled without prejudice or disclaimer of the subject matter therein or equivalents thereof. Claim 52 has been amended. No new matter has been entered. This amendment is in response to the Office Action dated February 7, 2011.

I. STATUS OF THE CLAIMS

Claims 52-64 are rejected under 35 U.S.C. § 112, second paragraph, (hereinafter, “Section 112, Par. 2”), as being indefinite.

Claims 52, 55, 57, 59, 61, 63 and 64 are rejected under 35 U.S.C. § 103(a), (hereinafter, “Section 103(a)”), as being unpatentable over Bedell et al. (U.S. Pat. No. 5,686,907, hereinafter “Bedell”) in view of Baston et al. (U.S. Pat. No. 4,260,121, hereinafter “Baston”).

Claims 54, 56, 58, 60 and 62 are rejected under Section 103(a) as being unpatentable over Bedell and Baston as applied to claims 52, 55 and 59 above, and further in view of Lindstrom et al. (U.S. Pat. 6,299,108 B1, hereinafter “Lindstrom”).

Applicant respectfully traverses all rejections and requests reconsideration of the pending claims for at least the following reasons.

A. REJECTION UNDER SECTION 112, PAR. 2

In the Action on page 2, it is noted that there is insufficient antecedent basis for the “respective subsystems” and “port and starboard wings”. Accordingly, claim 52 has been amended to provide proper antecedence for these elements such that a clearly defined “subsystem” is claimed for each of “a port wing” and “a starboard wing”.

The claim has further been amended to clarify an embodiment of the invention in which the monitoring unit is provided

“to carry out a signal comparison between a respective subsystem of the port wing with a respective subsystem of the starboard wing and each subsystem comprises a drive train, a position transmitter which is located at the end of the drive train, and the angle position transmitter which is located on the drive unit”, and

“produces a control signal for monitored limiting of a power supply to the drive unit in the sense of limiting a drive power that is supplied,

whereas the position sensors have angle position transmitters on branching transmissions of the drive trains, and whereas the position sensors which are located at each of the ends of the drive trains and an angle position transmitter which is located on the drive unit are provided, whereas the monitoring unit is provided in order to calculate the at least one reference variable, which represents the load in the drive train from its signals”.

Accordingly, it is believed the amended claim makes clear the signal comparison between the subsystems and thereby a sensing system in a high-lift system of the aircraft that extends over the entire wingspan from the port wing to the starboard wing. It is therefore

respectfully requested that the entirety of the amended claim 52 and all elements be examined in light of the cited references. It is believed the amendments to claim 52 overcome the rejection under Section 112, Par. 2 and withdrawal of the rejection is respectfully requested.

B. REJECTION UNDER SECTION 103(a), BEDELL IN VIEW OF BASTON

Claims 52, 55, 57, 59, 61, 63 and 64 are rejected under Section 103(a) as being unpatentable over Bedell in view of Baston. Applicant respectfully traverses this rejection. In the interests of moving along examination, independent claim 52, upon which claims 55, 59, 63 and 64 all depend from, has been amended to claim an embodiment of the present invention, reciting in part:

“An apparatus for load limiting in an aircraft high-lift system,...the position sensors have an angle position transmitter on the drive unit, and angle position transmitters, which operate as asymmetry transmitters, at the ends of the drive trains, ...

the monitoring unit is provided to carry out a signal comparison between a respective subsystem in a port wing and a respective subsystem in a starboard wing and each subsystem comprises a drive train, a position transmitter which is located at the end of the drive train, and the angle position transmitter which is located on the drive unit,

produces a control signal for monitored limiting of a power supply to the drive unit in the sense of limiting a drive power that is supplied,

whereas the position sensors have angle position transmitters on branching transmissions of the drive trains, and whereas the position sensors which are located at each of the ends of the drive trains and an angle position transmitter which is located on the drive unit are provided, whereas the monitoring unit is provided in order to calculate the at least one reference variable, which represents the load in the drive train from its signals.”

As required for a showing of obviousness, all claim elements must be shown by the combination of Bedell and Baston. Applicant respectfully traverses the rejections of the Action. The elements of amended claim 52 are not disclosed by Bedell in combination with Baston.

Bedell and Baston fail to disclose the apparatus is for load limiting in an aircraft high-lift system extending from the end of the starboard wing to the end of the port wing:

The amendments which are believed to overcome the rejection under Section 112, Par. 2 are further believed to clarify the embodiments of the invention in which the high-lift system extends over the entire wing span of the aircraft. The claim recites “whereas the monitoring unit is provided to carry out a signal comparison between a respective subsystem in a port wing and a respective subsystem in a starboard wing and each subsystem comprises a drive train, a position transmitter which is located at the end of the drive train, and the angle position transmitter which is located on the drive unit,...” Accordingly, the system encompasses the entire wing span and is not limited to an individual segment of only a single slat in a single wing, combined with a position sensor at the end of the dedicated wing as in Bedell. Bedell only discloses such limited system for sensing a jamming in an individual segment of a landing-flap and/or landing-edge slat system.

In particular, amended claim 52 recites “the position sensors have an angle position transmitter on the drive unit, and angle position transmitters...at the ends of the drive trains,” and “have angle position transmitters on the branching transmissions of the drive trains”. Accordingly, all the respective position sensors have “angle position transmitters”. Bedell on the other hand fails to disclose the recited structure of claim 52, by only disclosing proximity

sensors 44 for sensing a linear approximation, thus the sensors 44 of Bedell do not teach or suggest the claimed angle position transmitters. It is only the slot position sensor 34 at the end of the wing that is intended to be used as a reference signal for the proximity sensor 44, applied for interacting with proximity targets 40. Bedell fails to disclose the system in which each sensor is an angle position transmitter sensing an angle in the torque-tube of the drive train.

Bedell and Baston fail to disclose “an angle position transmitter on the drive unit”

Moreover, Bedell in light of Baston fails to provide for the deficiencies of Bedell. Contrary to the Action, Baston does not teach of “an angle position transmitter on the drive unit”. Rather, as described in Baston, column 2, line 18-31, the position “disc 30” is “provided with a plurality of equi-spaced projections. Two probes 31, 32 are responsive to the passage of these projections as the shaft 16 rotates, to provide, on respective lines 33, 34, trains of pulses whose frequency is dependent on the speed of the shaft 16.” It appears that the arrangement in Baston represented by the “disc 30” and the “probes 31, 32” represent a tachometer to indicate the rotating speed of the shaft 16. Therefore, such speed indicator does not disclose, teach or suggest an “angle position transmitter on the drive unit” as required by claim 52. Accordingly, as Bedell and Baston fail to disclose at least such limitation, amended claim 52 is believed patentable over Baston in combination with Bedell.

Bedell and Baston fail to disclose the monitoring unit is provided to carry out a signal comparison between a respective subsystem in a port wing and a respective subsystem in a starboard wing and calculate at least one reference variable from the measured signals which are based on the comparison between the subsystems:

Amended claim 52 recites in part, “whereas the monitoring unit is provided to carry out a signal comparison between a respective subsystem in a port wing and a respective subsystem in a starboard wing...whereas the monitoring unit is provided in order to calculate the at least one reference variable, which represents the load in the drive train from its signals.”

Bedell in view of Baston fail to disclose such limitations of the claim. Bedell in particular refers in column 7, lines 29-34 and 49-51 to a comparison of only the actual slat proximity sensor state with the expected slat proximity sensor state. Bedell to the contrary does not disclose the claimed “reference variable” which represents the load in the entire drive train based on the signals provided by the angle position transmitter of the drive unit and the angle position transmitters at both ends of the wings. The ‘expected slat states’ of Bedell is in no manner suited to represent the reference variable, which enables the system to generate a plausibility-value by the monitoring unit which represents the load in the drive train.

Since Bedell and Baston fail to disclose both a “monitoring unit is provided to carry out a signal comparison between” the respective subsystems and “in order to calculate the at least one reference variable” based on the comparison of the signals between the respective subsystems, claim 52 is believed patentable over these references for failing to teach each and every claim limitation.

As claims 55, 59, 63 and 64 include all the limitations of their base claim 52, these dependent claims are believed allowable over Bedell and Baston for at least the same reasons as amended claim 52. Accordingly, Applicant respectfully requests withdrawal of the rejection of claims 52, 55, 59, 63 and 64 under Section 103(a).

C. REJECTION UNDER SECTION 103(a), BEDELL, BASTON AND
LINDSTROM

Claims 54, 56, 58, 60 and 62 are rejected under Section 103(a) as being unpatentable over Bedell and Baston and further in view of Lindstrom. By the present amendment, claims 54, 56, 58, 60 and 62 have been canceled and therefore the rejection of these claims is made moot. As discussed above, independent claim 52, is believed allowable over Bedell and Baston and is further patentable over Lindstrom. Amended claim 52 requires in part that the “position sensors have an angle position transmitter on the drive unit...angle position transmitters...at the ends of the drive trains” and “angle position transmitters on branching transmission of the drive trains” and “whereas the position sensors which are located at each of the ends of the drive trains and an angle position transmitter which is located on the drive unit are provided, whereas the monitoring unit is provided in order to calculate the at least one reference variable, which represents the load in the drive train from its signals.”

As required for a showing of obviousness, all claim elements must be disclosed by the combination of Bedell, Baston and Lindstrom. However, as discussed above, Bedell in view of Baston, fail to disclose, teach or suggest the underlying limitations of amended independent claim 52. Further, Lindstrom clearly fails to disclose the deficiencies of Bedell and Baston and is resorted to for “angle position transmitters on branching transmission of the drive trains”. Lindstrom at most only describes “rotary sensors 30” on the branching “transmission 12”. (Figs. 6-8, col. 3, lines 3-17). However, nowhere is there disclosed or motivation provided for the monitoring unit calculating a reference variable which represents the load in the entire drive train from the signals delivered by both the angle position transmitters at the

end of the drive trains and the angle position transmitter on the drive unit. As discussed, Baston does not disclose “an angle position transmitter on the drive unit” by its tachometer. Therefore, Lindstrom fails to provide for the deficiencies of Bedell and Baston or motivation for combination where underlying limitations are not disclosed. As such, claim 52 is believed patentable.

For at least the foregoing reasons, amended claim 52 is believed patentable over Bedell and Baston in view of Lindstrom, either alone or in combination, for not teaching the limitations of the claims. The claimed apparatus as recited in amended claim 52 has a fundamentally different structural arrangement from Bedell, Baston and Lindstrom. As claimed, Applicant’s apparatus achieves the desired objective of the invention in measuring of an angle-deviation between the port and the starboard wings. Accordingly, it is believed that amended claim 52 is patentable over Bedell and Baston and further in view of Lindstrom.

Since Bedell in light of Baston and Lindstrom fail to teach or suggest ALL claim limitations as required to establish a prima facie case of obviousness, Applicant respectfully requests withdrawal of the rejection of the claims under Section 103(a).

II. CONCLUSION

If, for any reason, the Examiner believes that the claims of this application are not yet in full condition for allowance, applicant respectfully requests the Examiner’s constructive assistance and suggestions pursuant to the spirit of MPEP § 2173.02 and § 707.07(j). The Examiner is authorized to make any needed minor corrections or changes.

In view of the foregoing, Applicant respectfully submits that all of the pending claims of the present application are now in condition for allowance. Reconsideration and allowance of the present application are therefore earnestly requested. Should the Examiner have any questions regarding the above amendments, the Examiner is invited to telephone Applicant's representative at the number listed below.

Respectfully submitted,

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/Juneko Jackson/
Juneko Jackson (Reg. No.: 48,870)
Otto O. Lee (Reg. No.: 37,871)
Intellectual Property Law Group LLP
Attorneys for Applicant
Contact No.: 408-286-8933